

CLAIMS

We claim:

1. A steerable catheter comprising:

a tubular body defining at least one lumen extending from a proximal end region of the tubular body to a point along the length of the tubular body; and

the at least one lumen defining at least one inlet port adapted for coupling to a fluid source, the at least one lumen being otherwise sealed.
2. The steerable catheter of claim 1 wherein the tubular body defines at least one curve.
3. The steerable catheter of claim 2 whereby the at least one lumen is adapted to change the at least one curve by the introduction of fluid through the inlet port and into the at least one lumen.
4. The steerable catheter of claim 1 wherein the at least one lumen extends to a distal end region along the length of the tubular body.
5. The steerable catheter of claim 1 further comprising a flexible and resilient member connected with the tubular body, the flexible and resilient member defining the at least one curve and imparting the at least one curve on the tubular body.
6. The steerable catheter of claim 1 whereby fluid may be introduced into the at least one lumen to change the shape of the catheter.
7. The steerable catheter of claim 1 wherein the at least one lumen comprises at least a first lumen and at least a second lumen.

8. The steerable catheter of claim 7 wherein the first lumen terminates at a first point along the length of the catheter, and wherein the second lumen terminates at a second point along the length of the catheter.

9. The steerable catheter of claim 8 where the first point and the second point are offset.

10. The steerable catheter of claim 7 wherein:

the tubular body defines a circumference;

the first lumen is arranged along a first region of the circumference;

the second lumen is arranged along a second region of the circumference; and

the first region is offset from the second region.

11. The steerable catheter of claim 1 wherein the at least one lumen comprises a plurality of lumens arranged to steer the catheter in any direction.

12. The steerable catheter of claim 1 further comprising an ablation fluid supply lumen.

13. The steerable catheter of claim 12 further comprising:

at least one manifold defining at least one ablation fluid flow path out of the ablation fluid supply lumen, the at least one manifold comprising:

at least one inlet port in fluid communication with the ablation fluid supply lumen;

at least one outlet port in fluid communication with the at least one inlet port, the at least one output port having a larger dimension than the at least one inlet port; and

an electrode positioned in the at least one ablation fluid flow path.

14. The steerable catheter of claim 2, further comprising at least one flexible electrode arranged along the at least one curve.

15. The steerable catheter of claim 14 wherein the at least one flexible electrode comprises at least one electrode strand arranged in a saw tooth pattern.

16. The steerable catheter of claim 14 wherein the at least one flexible electrode comprises at least one electrode strand arranged in an interlaced configuration.

17. A steerable catheter comprising:

a sheath having a proximal end region and a distal end region, the distal end region adapted for performance of a medical procedure, the sheath defining at least one steering lumen, the steering lumen defining at least one inlet port adapted for the introduction of steering fluid into the at least one steering lumen;

the steering lumen not defining any openings along the distal end region of the sheath;
and

a flexible and resilient member connected with the sheath, the member defining at least one curve.

18. A method of steering a catheter within a human body comprising:

providing for introduction of a catheter into the human body, the catheter comprising a tubular body including at least one lumen, the at least one lumen defining an inlet port adapted for coupling to a fluid source, the at least one lumen being otherwise sealed; and

providing for introduction of a fluid from the fluid source into the inlet port, the fluid creating force to bend the tubular body and thereby steer the catheter.

19. The method of claim 18 wherein the at least one lumen comprises at least a first lumen and at least a second lumen, the first lumen terminating at a first point along the length and circumference of the catheter, the second lumen terminating at a second point along the length and circumference of the catheter, the first lumen including a first inlet port adapted for coupling to a fluid source, the second lumen including a first inlet port adapted for coupling to the fluid source, and further comprising:

providing for introduction of a fluid from the fluid source into the first inlet port, the fluid creating a first force to bend the tubular body; and

providing for introduction of a fluid from the fluid source into the second inlet port, the fluid creating a second force to bend the tubular body.

20. The method of claim 19 whereby the catheter may be steered in any direction.